ABSTRACT

A polymer stent is disclosed for treating vascular disorders. The stent is formed from a billet having regions with varying plastic strain imposed by drawing the regions through different sized dies at different speeds under different loads. The drawing orients the molecules of the polymer lengthwise along the stent. The stent is placed on a catheter and positioned within the vascular vessel being treated. The stent is expanded radially outwardly by a balloon on the catheter, expansion being facilitated by heat applied to the stent from the balloon. The polymer molecules are oriented circumferentially by the expansion and the mechanical properties of the stent are established. The billet has different compounds, such as medicaments and radiopaque markers distributed throughout the regions. The medicaments are released into the blood stream. The stent may be bio-stable or bio-absorbable.

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